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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,902	02/20/2004	Cheol-jin Park	Q77979	5335

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

DINH, TUAN T

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/781,902

Applicant(s)

PARK, CHEOL-JIN

Examiner

Tuan T. Dinh

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 6-9, 12, 13, 15 and 18-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10, 11, 14, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of Group I, Specie I (figures 2-3, claims 1-5, 10-11, 14, and 16-18) in the reply filed on 04/14/06 is acknowledged.

Claim 18 does not read on Specie I (figures 2-3). Thus, claim 18 is withdrawn further consideration as being drawn to non-elected subject matter.

Claim Objections

2. Claims 2 and 14 are objected to because of the following informalities:

Claim 2, line 2, not clear. The phrase of "a plurality of first elements through hole" is not understood. What does applicant mean? Does applicant mean of "a plurality of first elements being through hole elements?", please verify.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by McCutchan et al. (US 5,864,478).

As to claim 10, McCutchan et al. discloses an inverter power module, comprising: a main board (11) on which a plurality of first elements are through hole mounted, a sub-board (13) on which a plurality of second elements (chips) are surface mounted, wherein a connector (17) for mounting the sub-board in a through hole-mounting manner is provided on a side of the main board where the first elements are mounted, and a pin header (19) corresponding to the connector is provided on the sub-board.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5, 14, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCutchan et al. (US 5,864,478) in view of Handforth et al. (US 6,061,241).

As to claims 1-5, 14, McCutchan et al. discloses an inverter power module as shown in figure 1, comprising: a main board (11, column 2, line 52) having a power block (15, column 2, line 56, and 17, column 2, line 59) is arranged, the power block further including a plurality of first elements through hole-mounted on a front side of the main board and a sub-board mounting part (17) (claim 2); and a sub-board (13, column 2, line 54) having component is arranged, see figure 1, and is mounted on the main board (11), the sub-board mounting part (17) comprising at least one connector and the

sub-board comprises a pin header (19, column 2, line 60) corresponding to the connector.

McCutchan et al. does not specific disclose an inverter block, which has second elements surface-mounted on one side or on front and back sides of the sub-board.

Handforth et al. shows an inverter module (200) having a plurality of surface mounted components mounted on a substrate (12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a teaching of Handforth et al. employed in the module of McCutchan et al. in order to achieve high productivity and functions operated in the circuit board.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCutchan et al. ('478) in view of Prior Art (PA-figures 1A-1B, submitted by applicant).

As to claim 11, McCutchan et al. does not disclose the first elements comprise a line filter; X-cap; Y-cap; a power-IC; an input rectifying block comprising a first switching FET; an output rectifying block comprising a diode, an inductor, and a capacitor, and a feedback circuit block comprising a photo-coupler, a power transformer, and an inverter transformer, and the second elements comprise a dimming element; an inverter-IC; a second switching FET; a third switching FET; a first protection element, and a second protection element.

PA teaches an inverter power module as shown in figures 1A-1B comprising a line filter; X-cap; Y-cap; a power-IC; an input rectifying block comprising a first switching

FET; an output rectifying block comprising a diode, an inductor, and a capacitor, and a feedback circuit block comprising a photo-coupler, a power transformer, and an inverter transformer, and the second elements comprise a dimming element; an inverter-IC; a second switching FET; a third switching FET; a first protection element, and a second protection element.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a teaching of PA employed in the module of McCutchan et al. in order to perform more functionality operated in the module.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCutchan et al. in view of Handforth et al. as applied to claim 16 above, and further in view of PA (figures 1A-1B).

As to claim 17, McCutchan and Handforth et al. does not disclose the first elements comprise a line filter; X-cap; Y-cap; a power-IC; an input rectifying block comprising a first switching FET; an output rectifying block comprising a diode, an inductor, and a capacitor, and a feedback circuit block comprising a photo-coupler, a power transformer, and an inverter transformer, and the second elements comprise a dimming element; an inverter-IC; a second switching FET; a third switching FET; a first protection element, and a second protection element.

PA teaches an inverter power module as shown in figures 1A-1B comprising a line filter; X-cap; Y-cap; a power-IC; an input rectifying block comprising a first switching FET; an output rectifying block comprising a diode, an inductor, and a capacitor, and a

feedback circuit block comprising a photo-coupler, a power transformer, and an inverter transformer, and the second elements comprise a dimming element; an inverter-IC; a second switching FET; a third switching FET; a first protection element, and a second protection element.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a teaching of PA employed in the module of McCutchan and Handforth et al. in order to perform more functionality operated in the module.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Van Liere, Boylan et al., and Smith et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Tuan Dinh', with a stylized, cursive script.

Tuan Dinh
June 20, 2006.